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RESPIRATORY SYMPTOMS AND LUNG FUNCTION IN RELATION TO COTTON DUST AND ENDOTOXIN EXPOSURE IN TEXTILE WORKERS IN NEPAL

Priyamvada Paudyal,¹ Sean Semple,¹ Jon Ayres² ¹University of Aberdeen, Aberdeen, UK; ²University of Birmingham, Birmingham, UK

10.1136/oemed-2011-100382.208

Objectives Occupational exposure to cotton dust has been associated with various respiratory symptoms and impaired lung function. This study investigates the respiratory health profile of textile mill workers in Nepal in relation to dust and endotoxin exposure.

Methods This study was conducted in four sectors (garment, carpet, weaving and recycling) of the textile industry in Kathmandu, Nepal. A total of 938 individuals completed a health questionnaire and performed spirometry. Personal exposure to inhalable dust and airborne endotoxin was measured during a full-shift for 114 workers.

Results Overall prevalence of persistent cough, persistent phlegm, wheeze, breathlessness and chest tightness were 8.5%, 12.5%, 3.2%, 6.5% and 3.6% respectively. Symptoms were most common among the recyclers and least in the garment sector. Significant cross-shift reduction in FEV1, FVC, FEF25_75 were measured in the textile workers ($p < 0.001$ for all); reductions in FEV1 being greater in the recyclers (-143 ml) and smallest in the garment workers (-38 ml) ($p = 0.012$). Exposure to inhalable dust was significantly associated with the symptom of persistent cough ($p = 0.041$) and chest tightness ($p = 0.005$) as well as cross-shift reduction in FEV1 ($p < 0.001$). Exposure to endotoxin did not correlate with any of the respiratory symptoms nor to lung function.

Conclusions To the best of the authors' knowledge, this study is the first to investigate the respiratory health of cotton workers in Nepal. The associations between exposure to inhalable dust, self-reported respiratory symptoms and decrements in lung function suggest better dust control measures should be implemented in the cotton industries of Nepal.